

SEQUENCE LISTING

<110> Takeda Pharmaceutical Compnay Limited

<120> Use of SGLT homolog

<130> G05-0003

<150> JP 2002-314041

<151> 2002-10-29

<150> JP 2003-156306

<151> 2003-6-2

<160> 57

<210> 1

<211> 674

<212> PRT

<213> Homo Sapiens

<400> 1

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Ser Ile Arg Ala Ser Arg Gly Thr Ile Gly Gly Tyr Phe Leu Ala Gly
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Arg Ser Met Ser Trp Trp Pro Ile Gly Ala Ser Leu Met Ser Ser Asn
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Val Gly Ser Gly Leu Phe Ile Gly Leu Ala Gly Thr Gly Ala Ala Gly
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Gly Leu Ala Val Gly Gly Phe Glu Trp Asn Ala Thr Trp Leu Leu Leu
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 Thr Met Pro Gln Tyr Leu Lys Lys Arg Phe Gly Gly Gln Arg Ile Gln  
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 Val Tyr Met Ser Val Leu Ser Leu Ile Leu Tyr Ile Phe Thr Lys Ile  
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 Ser Thr Asp Ile Phe Ser Gly Ala Leu Phe Ile Gln Met Ala Leu Gly  
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 Trp Asn Leu Tyr Leu Ser Thr Gly Ile Leu Leu Val Val Thr Ala Val  
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 Tyr Thr Ile Ala Gly Gly Leu Met Ala Val Ile Tyr Thr Asp Ala Leu  
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 Phe Gln Asp Val Gly Trp Tyr Pro Gly Leu Glu Gln Arg Tyr Arg Gln  
 225 230 235 240  
 Ala Ile Pro Asn Val Thr Val Pro Asn Thr Thr Cys His Leu Pro Arg  
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 Pro Asp Ala Phe His Met Leu Arg Asp Pro Val Ser Gly Asp Ile Pro  
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 Trp Pro Gly Leu Ile Phe Gly Leu Thr Val Leu Ala Thr Trp Cys Trp  
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 Cys Thr Asp Gln Val Ile Val Gln Arg Ser Leu Ser Ala Lys Ser Leu  
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 Gly Ala Arg Val Gly Cys Ser Asn Ile Ala Tyr Pro Lys Leu Val Met  
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 Ala Leu Met Pro Val Gly Leu Arg Gly Leu Met Ile Ala Val Ile Met  
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 Ala Ala Leu Met Ser Ser Leu Thr Ser Ile Phe Asn Ser Ser Ser Thr  
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Leu Phe Thr Ile Asp Val Trp Gln Arg Phe Arg Arg Lys Ser Thr Glu  
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 Thr Pro Glu Gln Ala Leu Ser Pro Ala Glu Lys Ala Ala Leu Glu Gln  
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 Lys Leu Thr Ser Ile Glu Glu Glu Pro Leu Trp Arg His Val Cys Asn  
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&lt;210&gt; 2

&lt;211&gt; 2022

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

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<210> 3

<211> 678

<212> PRT

<213> Mus musculus

<400> 3

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Ser	Arg	Gly	Thr	Val	Gly	Gly	Tyr	Phe	Leu	Ala	Gly	Arg	Ser	Met	Thr	
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Gly	Gly	Phe	Glu	Trp	Asn	Ala	Thr	Phe	Leu	Leu	Leu	Ala	Leu	Gly	Trp	
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 His Met Leu Arg Asp Pro Val Asn Gly Asp Ile Pro Trp Pro Gly Leu  
 260 265 270  
 Ile Phe Gly Leu Thr Val Leu Ala Thr Trp Cys Trp Cys Thr Asp Gln  
 275 280 285  
 Val Ile Val Gln Arg Ser Leu Ala Ala Lys Asn Leu Ser His Ala Lys  
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 Gly Gly Ser Val Leu Gly Gly Tyr Leu Lys Ile Leu Pro Met Phe Phe  
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 Ile Val Met Pro Gly Met Ile Ser Arg Ala Leu Tyr Pro Asp Glu Val  
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 Ala Cys Val Asp Pro Asp Ile Cys Gln Arg Val Cys Gly Ala Arg Val  
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 Gly Cys Ser Asn Ile Ala Tyr Pro Lys Leu Val Met Ala Leu Met Pro  
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 Val Gly Leu Arg Gly Leu Met Ile Ala Val Ile Met Ala Ala Leu Met  
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 Ser Ser Leu Thr Ser Ile Phe Asn Ser Ser Ser Thr Leu Phe Ala Ile  
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 Asp Val Trp Gln Arg Phe Arg Arg Gln Ala Ser Glu Gln Glu Leu Met  
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 Val Val Gly Arg Leu Phe Val Val Phe Leu Val Val Ile Ser Ile Leu  
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 450 455 460  
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Gly Leu Met Phe Gly Leu Val Val Gly Ile Leu Arg Met Ile Leu Glu  
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 Pro Asp Asp Lys Leu Ala Arg Leu Thr Trp Trp Thr Arg Asn Cys Ala  
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 Gly Ala Leu His Arg Ser Trp Gly Lys Trp Leu Trp Asn Trp Phe Cys  
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 Val Leu Glu Gln Lys Leu Thr Ser Ile Glu Glu Glu Pro Leu Trp Arg  
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&lt;210&gt; 4

&lt;211&gt; 2034

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;400&gt; 4

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<210> 5

<211> 681

<212> PRT

<213> Rattus norvegicus



&lt;400&gt; 5

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Val	Val	Ile	Tyr	Phe	Val	Phe	Val	Leu	Ala	Val	Gly	Ile	Trp	Ser	Ser
			35				40					45			
Ile	Arg	Ala	Ser	Arg	Gly	Thr	Ile	Gly	Gly	Tyr	Phe	Leu	Ala	Gly	Arg
			50				55					60			
Ser	Met	Thr	Trp	Trp	Pro	Ile	Gly	Ala	Ser	Leu	Met	Ser	Ser	Asn	Val
	65				70				75					80	
Gly	Ser	Gly	Leu	Phe	Ile	Gly	Leu	Ala	Gly	Thr	Gly	Ala	Ala	Gly	Gly
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Leu	Ala	Val	Gly	Gly	Phe	Glu	Trp	Asn	Ala	Thr	Phe	Leu	Leu	Leu	Ala
			100					105					110		
Leu	Gly	Trp	Ile	Phe	Val	Pro	Val	Tyr	Ile	Ala	Ala	Gly	Val	Val	Thr
			115				120						125		
Met	Pro	Gln	Tyr	Leu	Lys	Lys	Arg	Phe	Gly	Gly	Gln	Arg	Ile	Gln	Val
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Tyr	Met	Ser	Val	Leu	Ser	Leu	Ile	Leu	Tyr	Ile	Phe	Thr	Lys	Ile	Ser
	145				150				155					160	
Thr	Asp	Ile	Phe	Ser	Gly	Ala	Leu	Phe	Ile	Gln	Met	Ala	Leu	Gly	Trp
			165					170					175		
Asn	Leu	Tyr	Leu	Ser	Thr	Val	Ile	Leu	Leu	Val	Val	Thr	Ala	Val	Tyr
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	225				230				235					240	
Ile	Pro	Asn	Val	Thr	Val	Pro	Asn	Thr	Thr	Cys	His	Leu	Pro	Arg	Ser
			245					250					255		
Asp	Ala	Phe	His	Met	Leu	Arg	Asp	Pro	Val	Asn	Gly	Asp	Ile	Pro	Trp
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Pro Gly Leu Ile Phe Gly Leu Thr Val Leu Ala Thr Trp Cys Trp Cys  
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 His Ala Lys Gly Gly Ser Val Leu Gly Gly Tyr Leu Lys Ile Leu Pro  
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 Met Phe Phe Ile Val Met Pro Gly Met Ile Ser Arg Ala Leu Tyr Pro  
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 Asp Glu Val Ala Cys Val Asp Pro Asp Ile Cys Gln Arg Val Cys Gly  
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 Ala Arg Val Gly Cys Ser Asn Ile Ala Tyr Pro Lys Leu Val Met Ala  
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 370 375 380  
 Ala Leu Met Ser Ser Leu Thr Ser Ile Phe Asn Ser Ser Ser Thr Leu  
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 Ser Ile Leu Trp Ile Pro Ile Ile Gln Ser Ser Asn Ser Gly Gln Leu  
 435 440 445  
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 450 455 460  
 Ala Leu Phe Leu Leu Ala Ile Phe Cys Lys Arg Val Thr Glu Pro Gly  
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 500 505 510  
 Arg Pro Ala Val Leu Lys Asp Phe His Tyr Leu Tyr Phe Ala Leu Leu  
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 530 535 540  
 Glu Pro Ile Pro Asp Glu Lys Leu Ala Arg Leu Thr Trp Trp Thr Arg  
 545 550 555 560

Ser Cys Pro Ile Ser Glu Leu Gln Lys Lys Val Ser Val Ser Val Asn  
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 Glu Gly Thr Ala Gly Asp Glu Glu Glu Ala Asn Thr Thr Ser Glu Pro  
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 Glu Gln Pro Glu Val Leu His Arg Ser Trp Gly Lys Trp Leu Trp Asn  
                     610                    615                    620  
 Trp Phe Cys Gly Leu Ser Gly Thr Pro Gln Gln Ala Leu Ser Pro Ala  
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 Glu Lys Ala Glu Leu Glu Gln Lys Leu Thr Ser Ile Glu Glu Glu Pro  
                     645                    650                    655  
 Leu Trp Arg Cys Val Cys Asn Ile Asn Ala Ile Ile Leu Leu Ala Ile  
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<210> 6

<211> 2043

<212> DNA

<213> *Rattus norvegicus*

<400> 6

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<400> 31

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22

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22

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25



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&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Primer

&lt;400&gt; 48

atggacagta gcaccttgag cc

22

&lt;210&gt; 49

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Primer

&lt;400&gt; 49

tcaggcaaaa taggcgtggc ag

22

&lt;210&gt; 50

&lt;211&gt; 681

&lt;212&gt; PRT

&lt;213&gt; Hamster

&lt;400&gt; 50

Met Glu Pro Gly Asp Ser Gly Asp Ala Val Ser Ala Glu Ala Ala Pro

5

10

15

His Leu Ala Leu Asp Ser Gly Val Ser Leu His Ala Tyr Asp Ile Leu

20

25

30

Val Val Val Ile Tyr Phe Val Phe Val Leu Ala Val Gly Ile Trp Ser

35

40

45

Ser Val Arg Ala Ser Arg Gly Thr Ile Gly Gly Tyr Phe Leu Ala Gly

50

55

60

Arg Ser Met Thr Trp Trp Pro Ile Gly Ala Ser Leu Met Ser Ser Asn			
65	70	75	80
Val Gly Ser Gly Leu Phe Ile Gly Leu Ala Gly Thr Gly Ala Ala Gly			
	85	90	95
Gly Leu Ala Val Gly Gly Phe Glu Trp Asn Ala Thr Trp Leu Leu Leu			
	100	105	110
Ala Leu Gly Trp Ile Phe Val Pro Val Tyr Ile Ala Ala Gly Val Val			
	115	120	125
Thr Met Pro Gln Tyr Leu Lys Lys Arg Phe Gly Gly Gln Arg Ile Gln			
	130	135	140
Val Tyr Met Ser Val Leu Ser Leu Ile Leu Tyr Ile Phe Thr Lys Ile			
145	150	155	160
Ser Thr Asp Ile Phe Ser Gly Ala Ile Phe Ile Gln Met Ala Leu Gly			
	165	170	175
Trp Asn Leu Tyr Leu Ser Thr Val Ile Leu Leu Val Val Thr Ala Val			
	180	185	190
Tyr Thr Ile Ala Gly Gly Leu Thr Ala Val Ile Tyr Thr Asp Ala Leu			
	195	200	205
Gln Thr Val Ile Met Val Gly Gly Ala Leu Val Leu Met Phe Leu Gly			
	210	215	220
Phe Gln Glu Val Gly Trp Tyr Pro Gly Leu Gln Gln Leu Tyr Lys Gln			
225	230	235	240
Ala Ile Pro Asn Val Thr Val Pro Asn Thr Thr Cys His Leu Pro Arg			
	245	250	255
Pro Asp Ala Phe His Met Leu Arg Asp Pro Val Asn Gly Asp Ile Pro			
	260	265	270
Trp Pro Gly Leu Ile Phe Gly Leu Thr Val Leu Ala Thr Trp Cys Trp			
	275	280	285
Cys Thr Asp Gln Val Ile Val Gln Arg Ser Leu Ser Ala Lys Ser Leu			
	290	295	300
Ser His Ala Lys Gly Gly Ser Val Leu Gly Gly Tyr Leu Lys Ile Leu			
305	310	315	320
Pro Met Phe Phe Ile Val Met Pro Gly Met Ile Ser Arg Ala Leu Tyr			
	325	330	335
Pro Asp Glu Val Ala Cys Val Asn Pro Asp Ile Cys Gln Arg Val Cys			
	340	345	350

Gly Ala Arg Val Gly Cys Ser Asn Ile Ala Tyr Pro Lys Leu Ile Met  
 355 360 365  
 Ala Leu Met Pro Val Gly Leu Arg Gly Leu Met Ile Ala Val Ile Met  
 370 375 380  
 Ala Ala Leu Met Ser Ser Leu Thr Ser Ile Phe Asn Ser Ser Ser Thr  
 385 390 395 400  
 Leu Phe Val Ile Asp Val Trp Gln Arg Phe Arg Lys Gln Ala Thr Glu  
 405 410 415  
 Gln Glu Leu Met Val Val Gly Arg Leu Phe Ile Val Phe Leu Val Val  
 420 425 430  
 Ile Ser Ile Leu Trp Ile Pro Ile Ile Gln Ser Ser Asn Ser Gly Gln  
 435 440 445  
 Leu Phe Asp Tyr Ile Gln Ser Ile Thr Ser Tyr Leu Ala Pro Pro Ile  
 450 455 460  
 Thr Ala Leu Phe Leu Leu Ala Ile Phe Ser Lys Arg Val Thr Glu Pro  
 465 470 475 480  
 Gly Ala Phe Trp Gly Leu Thr Leu Gly Leu Ala Val Gly Ile Val Arg  
 485 490 495  
 Met Ile Leu Glu Phe Ser Tyr Pro Ala Pro Ala Cys Gly Glu Met Asp  
 500 505 510  
 Arg Arg Pro Ala Val Leu Arg Asp Val His Tyr Leu Tyr Phe Ala Leu  
 515 520 525  
 Leu Leu Cys Gly Leu Ser Ala Ile Ile Thr Val Ile Ile Ser Phe Cys  
 530 535 540  
 Thr Glu Pro Ile Pro Asp Glu Lys Leu Ala Arg Leu Thr Trp Trp Thr  
 545 550 555 560  
 Arg Asn Cys Pro Leu Pro Glu Val Glu Lys Arg Ala Ser Val Ser Gly  
 565 570 575  
 Asp Met Glu Gly Glu Asn Thr Pro Gly Leu Ala Gly Thr Pro Ala Val  
 580 585 590  
 Glu Gly Pro Ser Gly Asp Gly Glu Glu Ala Arg Pro Thr Gln Gly Pro  
 595 600 605  
 Glu Lys Pro Arg Ala Gln His Arg Ser Trp Gly Lys Trp Leu Trp Ser  
 610 615 620  
 Trp Phe Cys Gly Leu Ser Gly Ala Pro Gln Gln Ala Leu Ser Ala Ala  
 625 630 635 640

Glu Lys Ala Ala Leu Glu Lys Lys Leu Thr Ser Ile Glu Glu Glu Pro  
                   645                  650                  655  
 Leu Trp Arg His Val Cys Asn Ile Asn Ala Ile Ile Leu Leu Ala Ile  
                   660                  665                  670  
 Asn Ile Phe Leu Trp Gly Tyr Phe Ala  
                   675                  680

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 <212> DNA  
 <213> Hamster

<400> 51

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<212> PRT

<213> Hamster

<400> 52

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 Val Ile Tyr Phe Val Val Val Met Ala Val Gly Leu Trp Ala Met Phe  
                   35                  40                  45  
 Ser Thr Asn Arg Gly Thr Val Gly Gly Phe Phe Leu Ala Gly Arg Ser  
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 Met Val Trp Trp Pro Ile Gly Ala Ser Leu Phe Ala Ser Asn Ile Gly  
                   65                  70                  75                  80  
 Ser Gly His Phe Val Gly Leu Ala Gly Thr Gly Ala Ala Ser Gly Ile  
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 Gly Trp Ile Phe Val Pro Ile Tyr Ile Arg Ala Gly Val Val Thr Met  
                   115                  120                  125  
 Pro Glu Tyr Leu Arg Lys Arg Phe Gly Gly Lys Arg Ile Gln Ile Tyr

130	135	140
Leu Ser Ile Leu Ser Leu Leu Leu Tyr Ile Phe Thr Lys Ile Ser Ala		
145	150	155
Asp Ile Phe Ser Gly Ala Ile Phe Ile Asn Leu Ala Leu Gly Leu Asp		160
	165	170
Ile Tyr Leu Ala Ile Phe Ile Leu Leu Ala Ile Thr Ala Leu Tyr Thr		175
	180	185
Ile Thr Gly Gly Leu Ala Ala Val Ile Tyr Thr Asp Ala Leu Gln Thr		190
	195	200
Ala Ile Met Leu Val Gly Ser Ile Ile Leu Thr Ala Phe Ala Phe Asn		205
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Glu Val Gly Gly Tyr Glu Ala Phe Val Glu Lys Tyr Met Lys Ala Ile		220
225	230	235
Pro Ser Met Ile Ser Asp Gly Asn Leu Thr Ile Lys Glu Glu Cys Tyr		240
	245	250
Thr Pro Lys Glu Asp Ser Phe His Ile Phe Arg Asp Pro Ile Lys Gly		255
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Asp Ile Pro Trp Pro Gly Leu Ile Phe Gly Leu Ser Ile Leu Ala Leu		270
	275	280
Trp Tyr Trp Cys Thr Asp Gln Val Ile Val Gln Arg Cys Leu Ser Ala		285
290	295	300
Lys Asn Met Ser His Val Lys Ala Gly Cys Thr Leu Cys Gly Tyr Leu		
305	310	315
Met Val Met Thr Gly Met Val Ser Arg Ile Leu Tyr Thr Asp Lys Ile		320
	325	330
Ala Cys Val Val Pro Ser Glu Cys Lys Lys Tyr Cys Gly Thr Ser Val		335
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Gly Cys Thr Asn Ile Ala Tyr Pro Thr Leu Val Val Glu Leu Met Pro		350
	355	360
Asp Gly Leu Arg Gly Leu Met Leu Ser Val Met Met Ala Ser Leu Met		365
370	375	380
Ser Ser Leu Thr Ser Ile Phe Asn Ser Ala Ser Thr Leu Phe Thr Met		
385	390	395
Asp Ile Tyr Thr Lys Ile Arg Lys Arg Ala Ser Glu Arg Glu Leu Met		400
	405	410
Ile Ala Gly Arg Leu Phe Met Leu Leu Leu Ile Ala Ile Ser Ile Ala		415

420	425	430
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435	440	445
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450	455	460
Leu Leu Ala Ile Phe Cys Lys Arg Val Asn Glu Gln Gly Ala Phe Trp		
465	470	475
Gly Leu Ile Leu Gly Phe Phe Ile Gly Val Ala Arg Met Ile Thr Glu		
485	490	495
Phe Ala Tyr Gly Thr Gly Ser Cys Met Glu Pro Ser Asn Cys Pro Thr		
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Ile Ile Cys Gly Val His Tyr Leu Tyr Phe Ala Ile Ile Leu Phe Val		
515	520	525
Ile Cys Val Ile Thr Ile Leu Thr Val Ser Phe Leu Thr Lys Pro Ile		
530	535	540
Pro Asp Val His Leu Tyr Arg Leu Cys Trp Ser Leu Arg Asn Ser Lys		
545	550	555
Glu Glu Arg Ile Asp Leu Asp Ala Gly Asp Glu Glu Thr Trp Glu Asp		
565	570	575
Ser Lys Asp Thr Ile Glu Ile Asp Thr Glu Ala Pro Gln Lys Glu Lys		
580	585	590
Gly Cys Phe Arg Arg Ala Tyr Asp Met Phe Cys Gly Leu Asp Gln Asp		
595	600	605
Lys Gly Pro Lys Met Thr Lys Glu Glu Glu Glu Ala Met Lys Leu Lys		
610	615	620
Met Thr Asp Thr Ser Glu Gln Pro Leu Trp Arg Thr Val Val Asn Ile		
625	630	635
Asn Gly Ile Ile Leu Leu Ala Val Ala Val Phe Cys His Gly Tyr Phe		
645	650	655
Ala		

&lt;210&gt; 53

&lt;211&gt; 1974

&lt;212&gt; DNA

&lt;213&gt; Hamster

&lt;400&gt; 53

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